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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|------------------------------------------------------------------------------------------------------------|-------------|----------------------|---------------------|------------------|
| 10/537,436 | 06/03/2005 | Akira Aochi | 050323 | 3190 |
| 23850 | 7590 | 05/04/2006 | EXAMINER | |
| ARMSTRONG, KRATZ, QUINTOS, HANSON & BROOKS, LLP 1725 K STREET, NW SUITE 1000 WASHINGTON, DC 20006 | | | NGUYEN, CHAUN | |
| | | ART UNIT | PAPER NUMBER | |
| | | | 2831 | |

DATE MAILED: 05/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/537,436 | AOCHI ET AL. | |

| | | |
|-----------------|-----------------|--|
| Examiner | Art Unit | |
| Chau N. Nguyen | 2831 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 06 March 2006.
 2a) This action is FINAL. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1 and 3-10 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1 and 3-10 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on 06 March 2006 is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) ~ | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 3 are rejected under 35 U.S.C. 102(b) as being anticipated by Eck (4,867,691).

Eck discloses (Figures 1 and 8) a circuit board connector formed by cutting a conductive plate material provided with plating layers (32 and 34) on front and back side thereof, the connector comprising a main body portion (16), a first connecting portion (12) for connecting to a first circuit board, and a second connecting portion (14) for connection to a terminal connecting socket (H) of a second circuit board, the second connecting portion being positioned in the terminal connecting socket, wherein the second connecting portion of the connector is formed into a shape having an annular transverse cross section in such a manner that cut surfaces at both edges of the second connecting portion oppose each other, so that one of the plating layers may form an outer circumferential

surface of the second connecting portion and be connected to the terminal connecting socket. Eck also discloses a gap being provided between the cut surfaces at both edges of the second connecting portion that oppose each other.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 1, 4, 5 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ward (3,764,955) in view of Eck.

Ward discloses (Figures 1-3) a circuit board connector formed by cutting a conductive plate material, the connector comprising a main body portion (32), a first connecting portion (34) for connecting to a first circuit board, and a second connecting portion (26) for connection to a terminal connecting socket (10) of a second circuit board, the second connecting portion being positioned in the terminal connecting socket, wherein the second connecting portion of the connector is formed into a shape having an annular transverse cross section in such a manner that cut surfaces at both edges of the second connecting portion oppose each other (Figure 1), and an outer circumferential surface of the second connecting portion being connected to the terminal connecting socket.

Ward does not disclose the conductive plate material being provided with plating layers on front and back side thereof. Eck discloses a circuit board connector comprising a conductive plate material being provided with plating layers on front and back side thereof. It would have been obvious to one skilled in the art to provide plating layers on front and back side of the conductive plate material of Ward as taught by Eck to enhance conductivity and minimize resistivity of the connector.

The modified connector of Ward also discloses a lead portion (30) provided between the main portion (32) and the second connecting portion (26), and the lead portion is subjected to a bending process for reinforcement (re claim 4), in the bending process, the lead portion is formed to have a C-shaped transverse cross section (re claim 5), the first circuit board being connected by the connector uprightly onto the second circuit board (re claim 9).

6. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada (JP2001-43914) in view of Neff et al. (4,150,355).

Sawada discloses a circuit board connector comprising the invention substantially as claimed except for the second connection portion having an annular transverse cross section and the cut surfaces being located inside the annular cross sectional shape. Neff et al. discloses a connector (Figures 2-3) comprising a connection portion having an annular transverse cross section with the cut surfaces being located inside the annular cross-sectional shape. It would have been obvious to one skilled in the art to modify the second connection portion of Sawada to have an annular cross section shape with the cut surface being located inside the annular cross-sectional shape such that if needed, a small wire can be connected to the opposed edges of the cut surfaces as taught by Neff et al.

7. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sawada in view of Neff et al. as applied to claim 6 above, and further in view of Singh.

Claims 7 and 8 additionally recite the lead portion being subjected to a bending process to have an O-shaped or a C-shaped transverse cross section. Singh discloses a circuit board connector comprising a first connection portion (32), a lead portion (34), and a second connection portion (36), wherein the lead portion is subjected to a bending process to have a C-shaped transverse cross section. It would have been obvious to one skilled in the art to modify the lead portion of Sawada to have a C-shaped transverse cross section as taught by Singh to provide another connection means for the connector.

8. Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuyama et al. (6,305,949) in view of Neff et al.

Okuyama et al. discloses a circuit board connector comprising the invention substantially as claimed including the connector being uprightly connected between first and second circuit boards. Okuyama et al. does not disclose the second connection portion (1b) having an annular transverse cross section with the

cut surfaces being located inside the annular cross-sectional shape. Neff et al. discloses a connector (Figures 2-3) comprising a connection portion having an annular transverse cross section with the cut surfaces being located inside the annular cross-sectional shape. It would have been obvious to one skilled in the art to modify the second connection portion of Okuyama et al. to have an annular cross section shape with the cut surface being located inside the annular cross-sectional shape such that if needed, a small wire can be connected to the opposed edges of the cut surfaces as taught by Neff et al.

Response to Arguments

9. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's argument that there is no suggestion to combine Neff et al. and Sawada (regarding claim 6) because Neff et al. teaches an electrical splice for a wire wound resistor, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5

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USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation to do so is found in the references themselves, specifically Neff et al. teaches that the cut surfaces are located inside the annular cross-sectional shape such that a small wire can be connected to the opposed edges of the cut surfaces of the connector. Moreover, although the connector of Sawada is used for splicing a wire wound resistor, Neff et al. in fact teaches an electrical connector. Neff et al. is relied upon only to support the position of bending the two opposed edges of the connecting portion inside the annular cross-section shape such that the connector can be connected to a small wire, Neff et al. does not have to disclose the connector being used as a circuit board connector.

Summary

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is

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filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chau N. Nguyen whose telephone number is 571-272-1980. The examiner can normally be reached on Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean Reichard can be reached on 571-272-2800 ext 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Chau N Nguyen
Primary Examiner
Art Unit 2831